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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,440	03/09/2004	Bruce Richard Crain	NORT 64197	1812

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EXAMINER

MANCUSO, HUEDUNG XUAN CAO

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/796,440

**Applicant(s)**

CRAIN ET AL.

**Examiner**

Huedung Cao Mancuso

**Art Unit**

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.  
2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2,5,6 and 9-13 is/are rejected.  
7) ☐ Claim(s) 3,4,7 and 8 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5, 6, and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aisenbrey (US 2002/0109634 A1) in view of Sanz (US 2004/0262453 A1).

Regarding claims 1, and 12, Aisenbrey (figure 10A) teaches a conformal load-bearing antenna assembly, comprising: a pan shaped 108 to fit within an aircraft window opening see paragraph [0052]; an antenna element 110 disposed within the pan see figure 10A; a connection for coupling a signal to the antenna element; a radio frequency connector mounted in the pan which Aisenbrey does not explicitly disclose which Aisenbrey does not explicitly disclose. However, it is inherent that in order for the antenna to perform its function, the connector is required for connecting a signal to the antenna. Furthermore, Aisenbrey does not disclose a pan providing structural rigidity as claimed. However, Sanz teaches that such pan providing structural rigidity is widely used in the art (Sanz, paragraph [0021]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Alt's antenna system with a

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pan providing structural rigidity, as taught by Sanz in order to have a good antenna structure.

Claims 2, and 9 add into claim 1, wherein the antenna element comprises a stripline supported by dielectric sheet, and at least one radiating element couple to stripline see abstract.

Claims 5, 6, 10, 11, and 13 add into claim 1, wherein the pan forms a pressure seal with the aircraft window opening, cavity behind the antenna element, a pressure seal over window opening; and a pan is structural replacement for a window plug; a bonding strap for carrying lightning currents from the antenna structure to a fuselage of the aircraft which Aisenbrey does not explicitly disclose. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pressure seal in order to hold the window from blowing away; and a bonding strap because conventional airplane would have a mechanism to handle lightning or thunder to prevent electrical damage to the on board electronic such as cockpit instrument.

### ***Allowable Subject Matter***

3. Claims 3, 4, 7, and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the Prior Art fails to teach that the antenna element further comprises a front ground plane and a back ground plane, with the front ground forming with one or more

slots adjacent to the radiating element; and a conductive gasket positioned adjacent to the perimeter of the antenna element, electrically bonding the antenna to an aircraft fuselage and providing a pressure seal .

### ***Response to Arguments***

4. Applicant's arguments filed 08/02/06 have been fully considered but they are not persuasive.

On page 3 of the response, applicant argues that Aisenbrey does not disclose the claimed "a conformal load-bearing antenna assembly" and that Aisenbrey states that one possible type of "structural resin can be a polyester that can be used to realize a cloth antenna". In response, the examiner would like to point out that, for at least claim 1, the limitation of "a conformal load-bearing antenna assembly" is only in the preamble and the "antenna assembly" is not specifically referenced in the body of the claim. Also, if the preamble were to be given the weight applicant apparently thinks it should be given, the claim would still be met by the reference as the claim recites that the "antenna assembly" (emphasis added) is what is "conformal" and "load-bearing", not the antenna itself as applicant is apparently arguing in his remarks. Therefore, the argument that the antenna in Aisenbrey can be made of a polyester that can be used to make a "cloth antenna" (not the embodiment relied upon by the examiner) is not convincing as the antenna is only part of the whole "assembly". This is evidenced by the claim which says that the "antenna assembly" comprises a "pan" that provides "structural integrity" and a separate antenna element "within the pan". Further, it is the

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combination of the reference that meet the claimed limitations and not the references individually. Aisenbrey discloses putting an antenna in the frame of an airplane window and Sanz discloses a standard airplane window (Figs 1, 2, 5) which will be rigid and provide "structural integrity" (paragraph [0020] indicates that the frame (7) can be an "aluminum frame" and paragraph [0021] states that the frame can be replaced by a "rigid panel (12), such a panel made of a composite material or the like").

In the paragraph bridging pages 3-4 of the response, applicant argues that the pan of Sanz "does not serve the same function as the pan of the Applicant's invention". The examiner disagrees because the only claimed function of the pan in claim 1 is "providing structural rigidity and shaped to fit within an aircraft window" and that the antenna is "disposed within the pan". Both are met by the references. Sanz explicitly states that element 12 is "rigid" and it replaces the frame and fits within the airplane window. Thus, all of the claimed functions of the "pan" are met.

As to the remarks on pages 4-5, applicant is arguing limitations that are explicitly in the claims (e.g., that the pan is a "pressure plug") or arguing limitations more specifically than actually claimed (e.g., that the antenna is in the window; the claim recites the antenna is within the "pan" which would be anywhere within the confines of the "pan", including the border of the pan or within the opening where the window is placed).

As to the remarks on page 6 directed to claims 5, 6, 10, 11, and 13, as stated previously these are conventional elements. Applicant has not challenged the conventionality of these elements or given any reasons why they are not conventional

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and only stated that they are not shown in the references. This is not a proper challenge (see MPEP 2144.03) and the rejection is maintained.

### ***Inquiries***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Mancuso whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan, can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Mancuso  
Patent Examiner



TRINH DINH  
PRIMARY EXAMINER

